SEDIMENT ANALYSIS FOR
KIHEI BOAT RAMP
KIHEI, MAUI, HAWAII

Prepared for:

State of Hawaii
Department of Land and Natural Resources
Division of Boating and Ocean Recreation
333 Queen Street, Suite 300
Honolulu, HI 96813

Submitted by:

Oceanit Laboratories, Inc.
828 Fort Street Mall, Suite 600
Honolulu, HI 96813

October 2006

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List of Acronyms

DOH	State of Hawaii Department of Health
EAL	Environmental Action Level
EPA	United State Environmental Protection Agency
HEER	Office of Hazard Evaluation and Emergency Response
kg	kilogram
µg	microgram
mg	milligram
mm	millimeter
NOAA	National Oceanographic and Atmospheric Administration
NSQS	National Sediment Quality Survey
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PEL	Probable Effects Level
PRG	Preliminary Remediation Goal
SVOC	Semi-Volatile Organic Compounds
TEF	Toxic Equivalency Factor
TEL	Threshold Effects Level
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compounds

INTRODUCTION

Kihei Small Boat Harbor on Maui, Hawaii serves as important launching facility for commercial and private recreational vessels. Sand accumulation is severely restricting safe access and maneuverability by watercraft. At Kihei, shoaling has narrowed the navigable boat channel in the harbor to one-way traffic, with water depths shallower than 5 feet at the end of the docks. In preparation for maintenance dredging, the Department of Land and Natural Resources (State of Hawaii) Division of Boating and Ocean Recreation contracted Oceanit to conduct sampling and analyses to determine whether contamination is present in the sediments at Kihei. Multiple sediment cores were collected and analyzed.

METHODS

On August 29, 2006, Oceanit staff collected sediment cores from three locations within Kihei harbor. Samples were collected using a hammer corer with a lexan-lined steel tube. The objective was to collect representative samples to the proposed dredge depth of 8 feet. A two foot or four foot sampling/coring tube was utilized depending on the water depth. Cores were collected from waters four feet deep or greater. Multiple cores at the same location were necessary to collect sufficient sample volume. Sediment from each core was placed in individual jars. Samples were composited (mixed) at the laboratory prior to analysis. Physical analyses included grain size. Chemical analyses included testing for the diesel, oil, and the full list of EPA Priority Pollutants. The Priority Pollutants list includes various metals, pesticides, cyanide, herbicides, PCBs, Dioxins, Volatile and Semi-volatile organic compounds. Samples were sent to AECOS Labs, Inc for grain size analysis and Calscience Environmental Laboratories for Chemical Analyses.

RESULTS

Physical Characteristics

Three sampling locations were selected at Kihei Small Boat Harbor (See Site Maps in Appendix A). Site 1 located the furthest south inside the harbor was in -3.6 feet of water. The corer advanced -3.2 feet into the sand. The core sample compressed to approximately 2 feet. A darker sand color was observed at the –1.7 foot point in the core. Site two was located between the two docks approximately 30 feet from the breakwater in –4.5 feet of water. No strata were observed in the core. The corer advanced to –3.5 feet below the surface of the sand. Site 3 was located in the harbor entrance channel in -6.5 feet of water. The corer only advanced 1.75 feet before encountering a hard substrate. A second and third attempt only yielded 0.5 foot penetration.

The substrate at Kihei Small Boat ramp is entirely light colored sand, with the exception of deeper areas in the entrance channel, which have occasional low, scoured, basalt outcroppings. No visual difference in sand composition was observed in the field. Sand collected from the more exposed point in the harbor entrance channel (Kihei 3) was slightly coarser than the two remaining samples and showed a narrower range in grain size distribution (Figure 1). Ultimately, though, the mean grain size for all three samples at Kihei fell between 0.25 and 0.5 mm.

Chemical Analyses

Table 1 lists the analysis methods for the samples collected at Kihei, and Appendix A contains the complete results for these analyses. Table 2 summarizes the findings for the Priority Pollutant analyses conducted on the composited samples for Kihei only for those compounds detected in the samples. Included in Table 2 are Tier I screening values developed by the Department of Health (DOH, State of Hawaii) Office of Hazard Evaluation and Emergency Response (HEER) as well as the National Oceanographic and Atmospheric Administration's (NOAA) National Sediment Quality Survey (NSQS) screening values.

To assess levels of environmental risk, sediment analysis data were directly compared to Tier I Environmental Action Level (EAL) tables developed by the Department of Health. These "Lookup tables" include action levels for commonly detected contaminants, and are based on previous action levels presented in *Risk-Based Corrective Action and Decision Making at Sites With Contaminated Soil and Groundwater* (DOH, June 1996) and include information gathered from the United States Environmental Protection Agency (EPA) Region IX Preliminary Remediation Goals (PRG). Action levels presented in the "Lookup tables" are conservative, such that if detected concentrations fall below an Action Level, risks to human health and environment can be considered to be insignificant. At the same time, though, the presence of chemicals at concentrations above the EALs does not necessarily indicate that a significant risk exists at the site. It does, however, generally indicate that additional investigation and evaluation of potential environmental concerns is warranted.

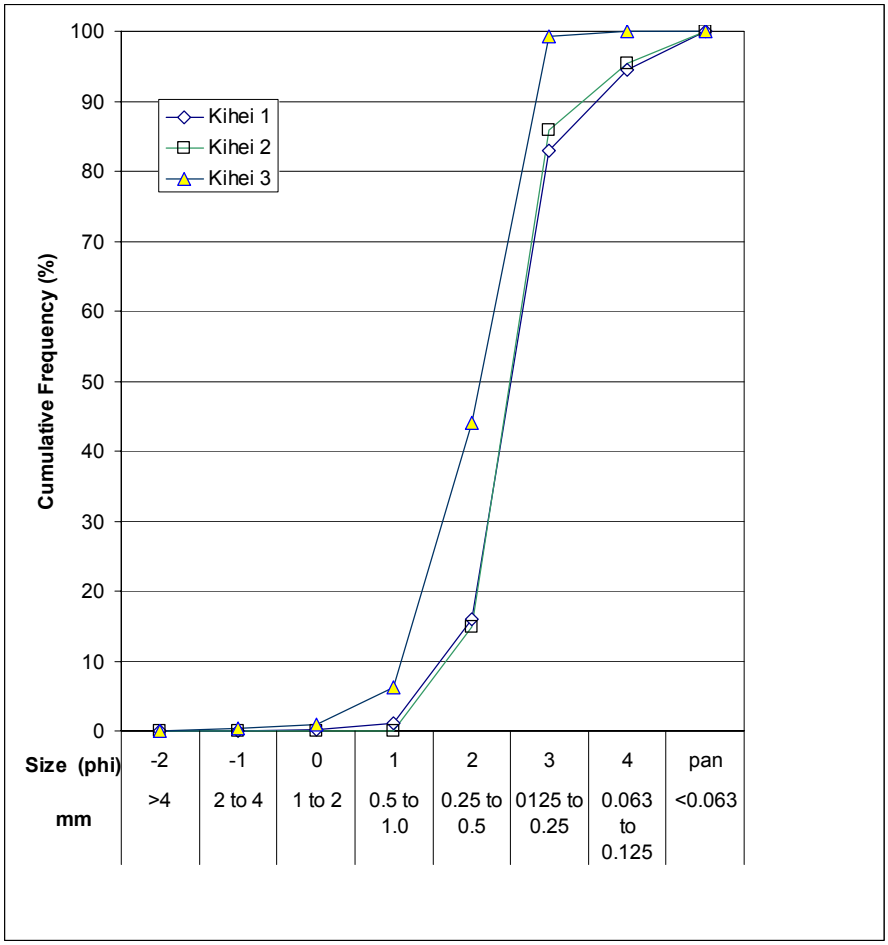


Figure 1. Graph illustrating sand grain size distribution at Kihei

Table 1. Analyte and corresponding EPA method used to test for presence.

Analyte	Method
Metals *	6010B/7471A
Cyanide	9010B/9014
TPH Oil TPH Diesel	8015B (m) 8015B (m)
PAH's	3545/8310
Organochlorine Pesticides	8081A/8091
Chlorinated Herbicides	8151A
PCBs	8081A/8100
VOC's	8260
SVOC's	8270
Dioxins	8280

* Including: Antimony, Arsenic, Beryllium, Cadmium, Chromium Copper, Lead Mercury, Nickel, Selenium, Silver, Thallium, Zinc

Table 2. List of detected compounds in sediments found at Kihei Boat Ramp. Where available, DOH and EPA screening levels are included for comparison.

	Method	Units	Kihei Reporting Limit	Kihei	DOH Screening EAL	EPA TEL/PEL
Metals						
Arsenic	6010B/7471A	mg/kg	0.8	14.2	20	7.24/41.6
Chromium	6010B/7471A	mg/kg	0.2	11.2	210	52.3/160
Nickel	6010B/7471A	mg/kg	0.2	13	150	15.9/42.8
Selenium	6010B/7471A	mg/kg	0.75	2.31	10	-
Silver	6010B/7471A	mg/kg	0.25	0.443	20	0.733/1.77
Thallium	6010B/7471A	mg/kg	0.75	1.34	5.2	-
Zinc	6010B/7471A	mg/kg	1	11.7	60	124/271
VOC's						
Acetone	8260B	ug/kg	50	69	500	-
Methylene Chloride	8260B	ug/kg	50	74	900	-
Dioxins						
Total TEF Adjusted Concentration	8280	ug/kg	-	0.000002	0.0039	-

Parameters used to determine appropriate EALs for this study include that these are soil samples take from immediately below waters of the Kihei Harbor, which is a non-drinking water source. While the HEER lookup tables were not directly designed for harbor floor sediments, these are the only standards available where upland disposed or reuse of dredge materials is being considered. The NOAA NSQS screening standards are very similar, and in some cases identical to the EPA's PRG's. The HEER EAL lookup tables are at least as conservative as the EPA's PRG's. The NSQS standards include Threshold Level Effects (TEL), concentrations below which toxic effects are rarely expected to occur in aquatic life, while Probable Effects Levels (PEL) represent the threshold above which toxic effects are anticipated. Screening levels for some compounds are not available.

Sediment samples at the Kihei boat ramp do not contain significant levels of contamination that would warrant further analysis or special handling of sediments if they were to be dredged. Arsenic levels measured 14.2 mg/kg at the Kihei site, above the EPA TEL of 7.24 mg/kg, but below the EPA PEL of 41.6 mg/kg and the HEER EAL of 20 mg/kg. Arsenic levels are typically elevated in Hawaii due to high background levels in volcanic soils, which is reflected in the HEER EAL of 20 mg/kg. The EPA and NOAA values do not take this into account.

REFERENCES

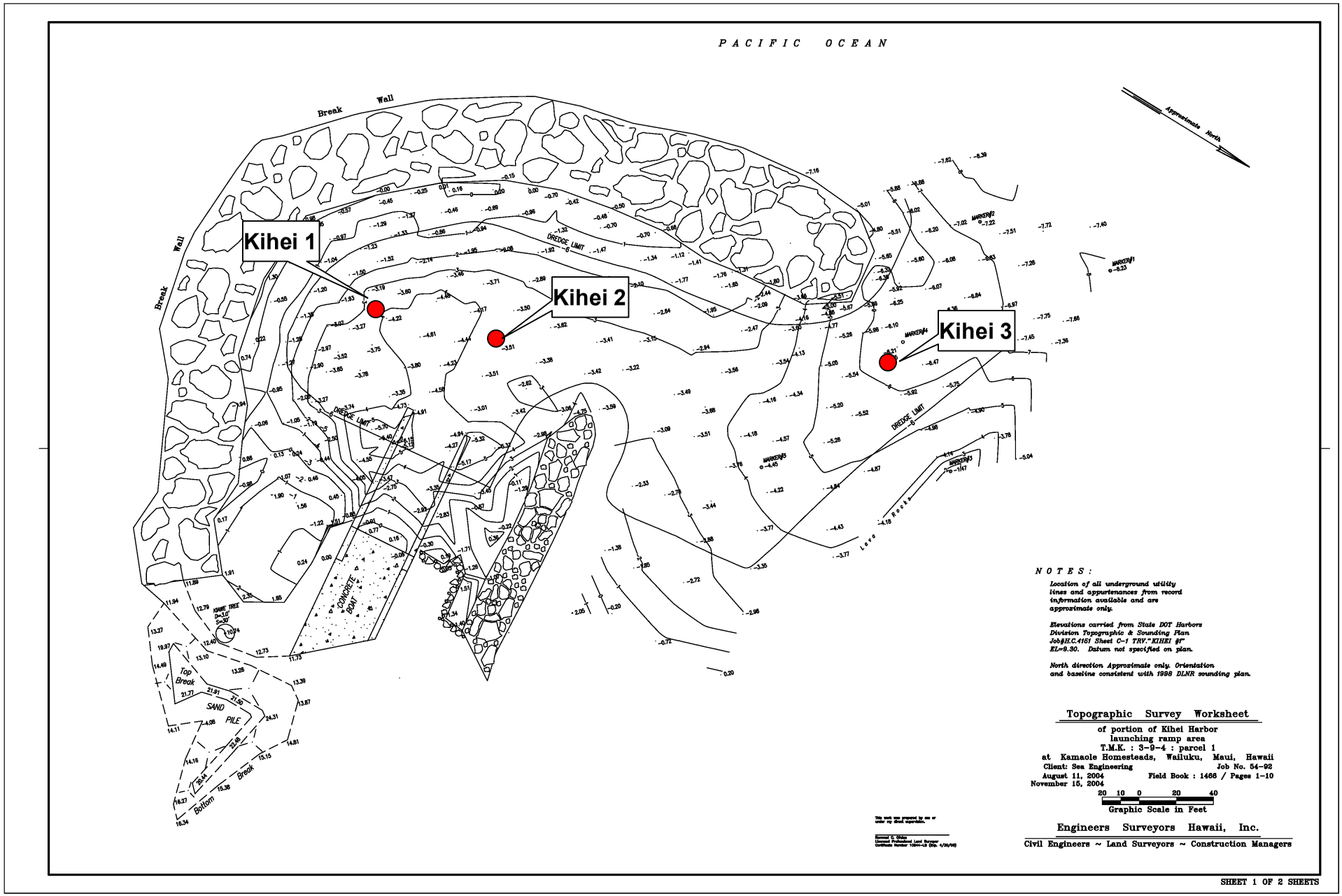
Hawaii Department of Health (DOH) 2005. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. DOH Environmental Management Division, Hazard Evaluation and Emergency Response (HEER). Interim Final May 2005

U.S. Environmental Protection Agency (EPA) 1998. Appendix D – Screening values for chemicals evaluated – in Volume 1 of The incidence and severity of sediment contamination in surface waters of the United States. 19 pp. www.epa.gov/waterscience/cs/vol1/appdx_d.pdf

U.S. Environmental Protection Agency (EPA) 2004a. User's Guide and Background Technical Document for USEPA Region IX's Preliminary Remediation Goals Table. 30 pp. October 2004

U.S. Environmental Protection Agency (EPA) 2004b. USEPA Region IX Preliminary Remediation Goals Table. 40 pp.

APPENDIX A: SITE MAP



Kihei Boat Ramp Sediment Sampling Locations

APPENDIX B: GRAIN SIZE ANALYSIS RESULTS

***AECOS*, Inc.**
45-939 Kamehameha Hwy #104
Kaneohe Hawaii 96744 (808)234-7770 fax: (808)234-7775

CLIENT: Oceanit
1001 Bishop Street, Pacific Tower, Ste 2970
Honolulu HI 96813
ATTN: Tobias

File No:	631
Report Date:	9/25/2006
Page:	1 of 2

GRAIN SIZE ANALYSIS RESULTS

Sample Type: sediment — *AECOS* Log No.: **22111**
Date Sampled: 8/31/2006 — Date Received: 8/31/2006

Fraction dry weight (mg)

size (mm)	>4	2 to 4	1 to 2	0.5 to 1.0	0.25 to 0.5	0125 to 0.25	0.063 to 0.125	<0.063	TOTAL
phi	-2	-1	0	1	2	3	4	pan	
Kihei 1	0.0	0.0	0.2	0.7	12	54.0	9.3	4.5	80.7
Kihei 2	0.0	0.0	0.0	0.0	12.5	60.2	8.0	3.9	84.6
Kihei 3	0.0	0.3	0.6	4.8	34.1	50.0	0.6	0.0	90.4

Fraction Percent (%)

size (mm)	>4	2 to 4	1 to 2	0.5 to 1.0	0.25 to 0.5	0125 to 0.25	0.063 to 0.125	<0.063	TOTAL
phi	-2	-1	0	1	2	3	4	pan	
Kihei 1	0.0	0.0	0.2	0.9	14.9	66.9	11.5	5.6	100
Kihei 2	0.0	0.0	0.0	0.0	14.8	71.2	9.5	4.6	100
Kihei 3	0.0	0.3	0.7	5.3	37.7	55.3	0.7	0.0	100

Fraction Cumulative Percent (%)

size (mm)	>4	2 to 4	1 to 2	0.5 to 1.0	0.25 to 0.5	0125 to 0.25	0.063 to 0.125	<0.063
phi	-2	-1	0	1	2	3	4	pan
Kihei 1	0.0	0.0	0.2	1.1	16.0	82.9	94.4	100.0
Kihei 2	0.0	0.0	0.0	0.0	14.8	85.9	95.4	100.0
Kihei 3	0.0	0.3	1.0	6.3	44.0	99.3	100.0	100.0

Analyzed by: cl

Laboratory Manager

APPENDIX C: CHEMICAL ANALYSES RESULTS

Calscience Environmental Laboratories, Inc.

September 12, 2006

Snookie Mello
AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Subject: **Calscience Work Order No.: 06-09-0026**
Client Reference: 022111

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 9/1/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Ranjit K. K. Clarke

Calscience Environmental
Laboratories, Inc.
Ranjit Clarke
Project Manager

Calscience Environmental Laboratories, Inc.

Work Order Case Narrative

Project Name: **022111**
Calscience Work Order Number: **06-09-0026**

1. Volatile Organic Compounds – EPA 8260B:

Methylene Chloride and Acetone were detected in both samples, but were not found in the Method Blank associated with their QC batch. These compounds are common laboratory contaminants. No further qualification of the data is necessary.

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3050B / EPA 7471A Total
		Method:	EPA 6010B / EPA 7471A
		Units:	mg/kg

Project: 022111

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Mala-Composite	**06-09-0026-19**	**08/29/06**	**Solid**	**09/05/06**	**09/06/06**	**060905L01**

Comment(s): -Mercury was analyzed on 9/5/2006 5:10:59 PM with batch 060905L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Mercury	ND	0.0835	1	
Arsenic	3.88	0.75	1		Nickel	125	0.250	1	
Beryllium	0.294	0.250	1		Selenium	ND	0.750	1	
Cadmium	ND	0.500	1		Silver	ND	0.250	1	
Chromium	38.9	0.2	1		Thallium	ND	0.750	1	
Copper	26.1	0.5	1		Zinc	39.8	1.0	1	
Lead	2.01	0.50	1						

[022111] Kihei-Composite	**06-09-0026-20**	**08/29/06**	**Solid**	**09/05/06**	**09/06/06**	**060905L01**

Comment(s): -Mercury was analyzed on 9/5/2006 5:13:12 PM with batch 060905L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Mercury	ND	0.0835	1	
Arsenic	14.2	0.8	1		Nickel	13.0	0.2	1	
Beryllium	ND	0.250	1		Selenium	2.31	0.75	1	
Cadmium	ND	0.500	1		Silver	0.443	0.250	1	
Chromium	11.2	0.2	1		Thallium	1.34	0.75	1	
Copper	ND	0.500	1		Zinc	11.7	1.0	1	
Lead	ND	0.500	1						

Method Blank	**099-04-007-4,124**	**N/A**	**Solid**	**09/05/06**	**09/05/06**	**060905L02**

Parameter	Result	RL	DF	Qual
Mercury	ND	0.0835	1	

Method Blank	**097-01-002-8,128**	**N/A**	**Solid**	**09/05/06**	**09/05/06**	**060905L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Lead	ND	0.500	1	
Arsenic	ND	0.750	1		Nickel	ND	0.250	1	
Beryllium	ND	0.250	1		Selenium	ND	0.750	1	
Cadmium	ND	0.500	1		Silver	ND	0.250	1	
Chromium	ND	0.250	1		Thallium	ND	0.750	1	
Copper	ND	0.500	1		Zinc	ND	1.00	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	N/A
		Method:	EPA 9010B/9014

Project: 022111

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Mala-Composite	**06-09-0026-19**	**08/29/06**	**Solid**	**09/09/06**	**09/09/06**	**60909CNL1**

Parameter	Result	RL	DF	Qual	Units
Cyanide, Total	ND	0.50	1		mg/kg

[022111] Kihei-Composite	**06-09-0026-20**	**08/29/06**	**Solid**	**09/09/06**	**09/09/06**	**60909CNL1**

Parameter	Result	RL	DF	Qual	Units
Cyanide, Total	ND	0.50	1		mg/kg

Method Blank	**099-05-029-1,646**	**N/A**	**Solid**	**09/09/06**	**09/09/06**	**60909CNL1**

Parameter	Result	RL	DF	Qual	Units
Cyanide, Total	ND	0.050	0.1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project: 022111

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Mala-Composite	**06-09-0026-19**	**08/29/06**	**Solid**	**09/05/06**	**09/06/06**	**060905B05**

Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	ND	25	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	104	61-145	

[022111] Kihei-Composite	**06-09-0026-20**	**08/29/06**	**Solid**	**09/05/06**	**09/06/06**	**060905B05**

Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	ND	25	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	96	61-145	

Method Blank	**099-12-254-6**	**N/A**	**Solid**	**09/05/06**	**09/05/06**	**060905B05**

Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	ND	25	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	100	61-145	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project: 022111

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Mala-Composite	**06-09-0026-19**	**08/29/06**	**Solid**	**09/05/06**	**09/06/06**	**060905B04**

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	104	61-145	

[022111] Kihei-Composite	**06-09-0026-20**	**08/29/06**	**Solid**	**09/05/06**	**09/06/06**	**060905B04**

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	96	61-145	

Method Blank	**099-12-275-2**	**N/A**	**Solid**	**09/05/06**	**09/05/06**	**060905B04**

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	100	61-145	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8081A/8082
		Units:	ug/kg
Project: 022111			Page 1 of 2

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Mala-Composite	**06-09-0026-19**	**08/29/06**	**Solid**	**09/05/06**	**09/06/06**	**060905L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	5.0	1		4,4'-DDT	ND	5.0	1	
Gamma-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Methoxychlor	ND	5.0	1	
Heptachlor	ND	5.0	1		Chlordane	ND	50	1	
Delta-BHC	ND	5.0	1		Toxaphene	ND	100	1	
Aldrin	ND	5.0	1		Aroclor-1016	ND	50	1	
Heptachlor Epoxide	ND	5.0	1		Aroclor-1221	ND	50	1	
Endosulfan I	ND	5.0	1		Aroclor-1232	ND	50	1	
Dieldrin	ND	5.0	1		Aroclor-1242	ND	50	1	
4,4'-DDE	ND	5.0	1		Aroclor-1248	ND	50	1	
Endrin	ND	5.0	1		Aroclor-1254	ND	50	1	
Endrin Aldehyde	ND	5.0	1		Aroclor-1260	ND	50	1	
4,4'-DDD	ND	5.0	1		Aroclor-1262	ND	50	1	
Endosulfan II	ND	5.0	1		Endrin Ketone	ND	5.0	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	101	50-130		2,4,5,6-Tetrachloro-m-Xylene	95	50-130	

[022111] Kihei-Composite	**06-09-0026-20**	**08/29/06**	**Solid**	**09/05/06**	**09/06/06**	**060905L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	5.0	1		4,4'-DDT	ND	5.0	1	
Gamma-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Methoxychlor	ND	5.0	1	
Heptachlor	ND	5.0	1		Chlordane	ND	50	1	
Delta-BHC	ND	5.0	1		Toxaphene	ND	100	1	
Aldrin	ND	5.0	1		Aroclor-1016	ND	50	1	
Heptachlor Epoxide	ND	5.0	1		Aroclor-1221	ND	50	1	
Endosulfan I	ND	5.0	1		Aroclor-1232	ND	50	1	
Dieldrin	ND	5.0	1		Aroclor-1242	ND	50	1	
4,4'-DDE	ND	5.0	1		Aroclor-1248	ND	50	1	
Endrin	ND	5.0	1		Aroclor-1254	ND	50	1	
Endrin Aldehyde	ND	5.0	1		Aroclor-1260	ND	50	1	
4,4'-DDD	ND	5.0	1		Aroclor-1262	ND	50	1	
Endosulfan II	ND	5.0	1		Endrin Ketone	ND	5.0	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	92	50-130		2,4,5,6-Tetrachloro-m-Xylene	99	50-130	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8081A/8082
		Units:	ug/kg
Project: 022111			Page 2 of 2

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	**095-01-014-2,876**	**N/A**	**Solid**	**09/05/06**	**09/05/06**	**060905L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	5.0	1		4,4'-DDT	ND	5.0	1	
Gamma-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Methoxychlor	ND	5.0	1	
Heptachlor	ND	5.0	1		Chlordane	ND	50	1	
Delta-BHC	ND	5.0	1		Toxaphene	ND	100	1	
Aldrin	ND	5.0	1		Aroclor-1016	ND	50	1	
Heptachlor Epoxide	ND	5.0	1		Aroclor-1221	ND	50	1	
Endosulfan I	ND	5.0	1		Aroclor-1232	ND	50	1	
Dieldrin	ND	5.0	1		Aroclor-1242	ND	50	1	
4,4'-DDE	ND	5.0	1		Aroclor-1248	ND	50	1	
Endrin	ND	5.0	1		Aroclor-1254	ND	50	1	
Endrin Aldehyde	ND	5.0	1		Aroclor-1260	ND	50	1	
4,4'-DDD	ND	5.0	1		Aroclor-1262	ND	50	1	
Endosulfan II	ND	5.0	1		Endrin Ketone	ND	5.0	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	74	50-130		2,4,5,6-Tetrachloro-m-Xylene	82	50-130	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 8151A
		Method:	EPA 8151A
		Units:	ug/kg
Project: 022111			Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Mala-Composite	**06-09-0026-19**	**08/29/06**	**Solid**	**09/05/06**	**09/08/06**	**060905L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Dalapon	ND	250	1		2,4-D	ND	100	1	
Dicamba	ND	10	1		2,4,5-TP (Silvex)	ND	10	1	
MCPP	ND	10000	1		2,4,5-T	ND	10	1	
MCPA	ND	10000	1		2,4-DB	ND	100	1	
Dichlorprop	ND	100	1		Dinoseb	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
2,4-Dichlorophenylacetic acid	99	30-130	

[022111] Kihei-Composite	**06-09-0026-20**	**08/29/06**	**Solid**	**09/05/06**	**09/08/06**	**060905L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Dalapon	ND	250	1		2,4-D	ND	100	1	
Dicamba	ND	10	1		2,4,5-TP (Silvex)	ND	10	1	
MCPP	ND	10000	1		2,4,5-T	ND	10	1	
MCPA	ND	10000	1		2,4-DB	ND	100	1	
Dichlorprop	ND	100	1		Dinoseb	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
2,4-Dichlorophenylacetic acid	68	30-130	

Method Blank	**095-01-033-559**	**N/A**	**Solid**	**09/05/06**	**09/06/06**	**060905L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Dalapon	ND	250	1		2,4-D	ND	100	1	
Dicamba	ND	10	1		2,4,5-TP (Silvex)	ND	10	1	
MCPP	ND	10000	1		2,4,5-T	ND	10	1	
MCPA	ND	10000	1		2,4-DB	ND	100	1	
Dichlorprop	ND	100	1		Dinoseb	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
2,4-Dichlorophenylacetic acid	89	30-130	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8270C
		Units:	mg/kg
Project: 022111			Page 1 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Mala-Composite	**06-09-0026-19**	**08/29/06**	**Solid**	**09/05/06**	**09/08/06**	**060905L10**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
N-Nitrosodimethylamine	ND	0.50	1		2,4-Dinitrophenol	ND	2.5	1	
Aniline	ND	0.50	1		4-Nitrophenol	ND	0.50	1	
Phenol	ND	0.50	1		Dibenzofuran	ND	0.50	1	
Bis(2-Chloroethyl) Ether	ND	2.5	1		2,4-Dinitrotoluene	ND	0.50	1	
2-Chlorophenol	ND	0.50	1		2,6-Dinitrotoluene	ND	0.50	1	
1,3-Dichlorobenzene	ND	0.50	1		Diethyl Phthalate	ND	0.50	1	
1,4-Dichlorobenzene	ND	0.50	1		4-Chlorophenyl-Phenyl Ether	ND	0.50	1	
Benzyl Alcohol	ND	0.50	1		Fluorene	ND	0.40	1	
1,2-Dichlorobenzene	ND	0.50	1		4-Nitroaniline	ND	0.50	1	
2-Methylphenol	ND	0.50	1		Azobenzene	ND	0.50	1	
Bis(2-Chloroisopropyl) Ether	ND	0.50	1		4,6-Dinitro-2-Methylphenol	ND	2.5	1	
3/4-Methylphenol	ND	0.50	1		N-Nitrosodiphenylamine	ND	0.50	1	
N-Nitroso-di-n-propylamine	ND	0.50	1		2,4,6-Trichlorophenol	ND	0.50	1	
Hexachloroethane	ND	0.50	1		4-Bromophenyl-Phenyl Ether	ND	0.50	1	
Nitrobenzene	ND	2.5	1		Hexachlorobenzene	ND	0.50	1	
Isophorone	ND	0.50	1		Pentachlorophenol	ND	2.5	1	
2-Nitrophenol	ND	0.50	1		Phenanthrene	ND	0.40	1	
2,4-Dimethylphenol	ND	0.50	1		Anthracene	ND	0.40	1	
Benzoic Acid	ND	2.5	1		Di-n-Butyl Phthalate	ND	0.50	1	
Bis(2-Chloroethoxy) Methane	ND	0.50	1		Fluoranthene	ND	0.40	1	
2,4-Dichlorophenol	ND	0.50	1		Benzidine	ND	10	1	
1,2,4-Trichlorobenzene	ND	0.50	1		Pyrene	ND	0.40	1	
Naphthalene	ND	0.40	1		Pyridine	ND	0.50	1	
4-Chloroaniline	ND	0.50	1		Butyl Benzyl Phthalate	ND	0.50	1	
Hexachloro-1,3-Butadiene	ND	0.50	1		3,3'-Dichlorobenzidine	ND	0.50	1	
4-Chloro-3-Methylphenol	ND	0.50	1		Benzo (a) Anthracene	ND	0.40	1	
2-Methylnaphthalene	ND	0.40	1		Bis(2-Ethylhexyl) Phthalate	ND	0.50	1	
1-Methylnaphthalene	ND	0.40	1		Chrysene	ND	0.40	1	
Hexachlorocyclopentadiene	ND	1.5	1		Di-n-Octyl Phthalate	ND	0.50	1	
2,4,5-Trichlorophenol	ND	0.50	1		Benzo (k) Fluoranthene	ND	0.40	1	
2-Chloronaphthalene	ND	0.50	1		Benzo (b) Fluoranthene	ND	0.40	1	
2-Nitroaniline	ND	0.50	1		Benzo (a) Pyrene	ND	0.35	1	
Dimethyl Phthalate	ND	0.50	1		Indeno (1,2,3-c,d) Pyrene	ND	0.40	1	
Acenaphthylene	ND	0.40	1		Dibenz (a,h) Anthracene	ND	0.40	1	
3-Nitroaniline	ND	0.50	1		Benzo (g,h,i) Perylene	ND	0.40	1	
Acenaphthene	ND	0.40	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
2-Fluorophenol	103	42-120		Phenol-d6	108	46-118	
Nitrobenzene-d5	95	42-150		2-Fluorobiphenyl	92	38-134	
2,4,6-Tribromophenol	116	36-132		p-Terphenyl-d14	71	35-167	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8270C
		Units:	mg/kg
Project: 022111			Page 2 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Kihei-Composite	**06-09-0026-20**	**08/29/06**	**Solid**	**09/05/06**	**09/08/06**	**060905L10**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
N-Nitrosodimethylamine	ND	0.50	1		2,4-Dinitrophenol	ND	2.5	1	
Aniline	ND	0.50	1		4-Nitrophenol	ND	0.50	1	
Phenol	ND	0.50	1		Dibenzofuran	ND	0.50	1	
Bis(2-Chloroethyl) Ether	ND	2.5	1		2,4-Dinitrotoluene	ND	0.50	1	
2-Chlorophenol	ND	0.50	1		2,6-Dinitrotoluene	ND	0.50	1	
1,3-Dichlorobenzene	ND	0.50	1		Diethyl Phthalate	ND	0.50	1	
1,4-Dichlorobenzene	ND	0.50	1		4-Chlorophenyl-Phenyl Ether	ND	0.50	1	
Benzyl Alcohol	ND	0.50	1		Fluorene	ND	0.40	1	
1,2-Dichlorobenzene	ND	0.50	1		4-Nitroaniline	ND	0.50	1	
2-Methylphenol	ND	0.50	1		Azobenzene	ND	0.50	1	
Bis(2-Chloroisopropyl) Ether	ND	0.50	1		4,6-Dinitro-2-Methylphenol	ND	2.5	1	
3/4-Methylphenol	ND	0.50	1		N-Nitrosodiphenylamine	ND	0.50	1	
N-Nitroso-di-n-propylamine	ND	0.50	1		2,4,6-Trichlorophenol	ND	0.50	1	
Hexachloroethane	ND	0.50	1		4-Bromophenyl-Phenyl Ether	ND	0.50	1	
Nitrobenzene	ND	2.5	1		Hexachlorobenzene	ND	0.50	1	
Isophorone	ND	0.50	1		Pentachlorophenol	ND	2.5	1	
2-Nitrophenol	ND	0.50	1		Phenanthrene	ND	0.40	1	
2,4-Dimethylphenol	ND	0.50	1		Anthracene	ND	0.40	1	
Benzoic Acid	ND	2.5	1		Di-n-Butyl Phthalate	ND	0.50	1	
Bis(2-Chloroethoxy) Methane	ND	0.50	1		Fluoranthene	ND	0.40	1	
2,4-Dichlorophenol	ND	0.50	1		Benzidine	ND	10	1	
1,2,4-Trichlorobenzene	ND	0.50	1		Pyrene	ND	0.40	1	
Naphthalene	ND	0.40	1		Pyridine	ND	0.50	1	
4-Chloroaniline	ND	0.50	1		Butyl Benzyl Phthalate	ND	0.50	1	
Hexachloro-1,3-Butadiene	ND	0.50	1		3,3'-Dichlorobenzidine	ND	0.50	1	
4-Chloro-3-Methylphenol	ND	0.50	1		Benzo (a) Anthracene	ND	0.40	1	
2-Methylnaphthalene	ND	0.40	1		Bis(2-Ethylhexyl) Phthalate	ND	0.50	1	
1-Methylnaphthalene	ND	0.40	1		Chrysene	ND	0.40	1	
Hexachlorocyclopentadiene	ND	1.5	1		Di-n-Octyl Phthalate	ND	0.50	1	
2,4,5-Trichlorophenol	ND	0.50	1		Benzo (k) Fluoranthene	ND	0.40	1	
2-Chloronaphthalene	ND	0.50	1		Benzo (b) Fluoranthene	ND	0.40	1	
2-Nitroaniline	ND	0.50	1		Benzo (a) Pyrene	ND	0.35	1	
Dimethyl Phthalate	ND	0.50	1		Indeno (1,2,3-c,d) Pyrene	ND	0.40	1	
Acenaphthylene	ND	0.40	1		Dibenz (a,h) Anthracene	ND	0.40	1	
3-Nitroaniline	ND	0.50	1		Benzo (g,h,i) Perylene	ND	0.40	1	
Acenaphthene	ND	0.40	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
2-Fluorophenol	96	42-120		Phenol-d6	100	46-118	
Nitrobenzene-d5	93	42-150		2-Fluorobiphenyl	82	38-134	
2,4,6-Tribromophenol	96	36-132		p-Terphenyl-d14	68	35-167	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8270C
		Units:	mg/kg
Project: 022111			Page 3 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	**095-01-002-1,678**	**N/A**	**Solid**	**09/05/06**	**09/08/06**	**060905L10**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
N-Nitrosodimethylamine	ND	0.50	1		2,4-Dinitrophenol	ND	2.5	1	
Aniline	ND	0.50	1		4-Nitrophenol	ND	0.50	1	
Phenol	ND	0.50	1		Dibenzofuran	ND	0.50	1	
Bis(2-Chloroethyl) Ether	ND	2.5	1		2,4-Dinitrotoluene	ND	0.50	1	
2-Chlorophenol	ND	0.50	1		2,6-Dinitrotoluene	ND	0.50	1	
1,3-Dichlorobenzene	ND	0.50	1		Diethyl Phthalate	ND	0.50	1	
1,4-Dichlorobenzene	ND	0.50	1		4-Chlorophenyl-Phenyl Ether	ND	0.50	1	
Benzyl Alcohol	ND	0.50	1		Fluorene	ND	0.40	1	
1,2-Dichlorobenzene	ND	0.50	1		4-Nitroaniline	ND	0.50	1	
2-Methylphenol	ND	0.50	1		Azobenzene	ND	0.50	1	
Bis(2-Chloroisopropyl) Ether	ND	0.50	1		4,6-Dinitro-2-Methylphenol	ND	2.5	1	
3/4-Methylphenol	ND	0.50	1		N-Nitrosodiphenylamine	ND	0.50	1	
N-Nitroso-di-n-propylamine	ND	0.50	1		2,4,6-Trichlorophenol	ND	0.50	1	
Hexachloroethane	ND	0.50	1		4-Bromophenyl-Phenyl Ether	ND	0.50	1	
Nitrobenzene	ND	2.5	1		Hexachlorobenzene	ND	0.50	1	
Isophorone	ND	0.50	1		Pentachlorophenol	ND	2.5	1	
2-Nitrophenol	ND	0.50	1		Phenanthrene	ND	0.40	1	
2,4-Dimethylphenol	ND	0.50	1		Anthracene	ND	0.40	1	
Benzoic Acid	ND	2.5	1		Di-n-Butyl Phthalate	ND	0.50	1	
Bis(2-Chloroethoxy) Methane	ND	0.50	1		Fluoranthene	ND	0.40	1	
2,4-Dichlorophenol	ND	0.50	1		Benzidine	ND	10	1	
1,2,4-Trichlorobenzene	ND	0.50	1		Pyrene	ND	0.40	1	
Naphthalene	ND	0.40	1		Pyridine	ND	0.50	1	
4-Chloroaniline	ND	0.50	1		Butyl Benzyl Phthalate	ND	0.50	1	
Hexachloro-1,3-Butadiene	ND	0.50	1		3,3'-Dichlorobenzidine	ND	0.50	1	
4-Chloro-3-Methylphenol	ND	0.50	1		Benzo (a) Anthracene	ND	0.40	1	
2-Methylnaphthalene	ND	0.40	1		Bis(2-Ethylhexyl) Phthalate	ND	0.50	1	
1-Methylnaphthalene	ND	0.40	1		Chrysene	ND	0.40	1	
Hexachlorocyclopentadiene	ND	1.5	1		Di-n-Octyl Phthalate	ND	0.50	1	
2,4,5-Trichlorophenol	ND	0.50	1		Benzo (k) Fluoranthene	ND	0.40	1	
2-Chloronaphthalene	ND	0.50	1		Benzo (b) Fluoranthene	ND	0.40	1	
2-Nitroaniline	ND	0.50	1		Benzo (a) Pyrene	ND	0.35	1	
Dimethyl Phthalate	ND	0.50	1		Indeno (1,2,3-c,d) Pyrene	ND	0.40	1	
Acenaphthylene	ND	0.40	1		Dibenz (a,h) Anthracene	ND	0.40	1	
3-Nitroaniline	ND	0.50	1		Benzo (g,h,i) Perylene	ND	0.40	1	
Acenaphthene	ND	0.40	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
2-Fluorophenol	108	42-120		Phenol-d6	113	46-118	
Nitrobenzene-d5	101	42-150		2-Fluorobiphenyl	97	38-134	
2,4,6-Tribromophenol	120	36-132		p-Terphenyl-d14	73	35-167	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8310
		Units:	ug/kg
Project: 022111			Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Mala-Composite	**06-09-0026-19**	**08/29/06**	**Solid**	**09/05/06**	**09/06/06**	**060905L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Naphthalene	ND	50	1		Benzo (a) Anthracene	ND	50	1	
Acenaphthylene	ND	50	1		Chrysene	ND	50	1	
Acenaphthene	ND	50	1		Benzo (b) Fluoranthene	ND	50	1	
Fluorene	ND	50	1		Benzo (k) Fluoranthene	450	50	1	
Phenanthrene	ND	50	1		Benzo (a) Pyrene	ND	50	1	
Anthracene	ND	50	1		Dibenz (a,h) Anthracene	ND	50	1	
Fluoranthene	ND	50	1		Benzo (g,h,i) Perylene	ND	50	1	
Pyrene	ND	50	1		Indeno (1,2,3-c,d) Pyrene	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
Decafluorobiphenyl	40	40-160	

[022111] Kihei-Composite	**06-09-0026-20**	**08/29/06**	**Solid**	**09/05/06**	**09/07/06**	**060905L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Naphthalene	ND	50	1		Benzo (a) Anthracene	ND	50	1	
Acenaphthylene	ND	50	1		Chrysene	ND	50	1	
Acenaphthene	ND	50	1		Benzo (b) Fluoranthene	ND	50	1	
Fluorene	ND	50	1		Benzo (k) Fluoranthene	ND	50	1	
Phenanthrene	ND	50	1		Benzo (a) Pyrene	ND	50	1	
Anthracene	ND	50	1		Dibenz (a,h) Anthracene	ND	50	1	
Fluoranthene	ND	50	1		Benzo (g,h,i) Perylene	ND	50	1	
Pyrene	ND	50	1		Indeno (1,2,3-c,d) Pyrene	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
Decafluorobiphenyl	89	40-160	

Method Blank	**099-07-002-735**	**N/A**	**Solid**	**09/05/06**	**09/05/06**	**060905L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Naphthalene	ND	50	1		Benzo (a) Anthracene	ND	50	1	
Acenaphthylene	ND	50	1		Chrysene	ND	50	1	
Acenaphthene	ND	50	1		Benzo (b) Fluoranthene	ND	50	1	
Fluorene	ND	50	1		Benzo (k) Fluoranthene	ND	50	1	
Phenanthrene	ND	50	1		Benzo (a) Pyrene	ND	50	1	
Anthracene	ND	50	1		Dibenz (a,h) Anthracene	ND	50	1	
Fluoranthene	ND	50	1		Benzo (g,h,i) Perylene	ND	50	1	
Pyrene	ND	50	1		Indeno (1,2,3-c,d) Pyrene	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
Decafluorobiphenyl	90	40-160	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/kg
Project: 022111			Page 1 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Mala-Composite	**06-09-0026-19**	**08/29/06**	**Solid**	**09/05/06**	**09/05/06**	**060905L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	74	50	1		1,3-Dichloropropane	ND	5.0	1	
Benzene	ND	5.0	1		2,2-Dichloropropane	ND	5.0	1	
Bromobenzene	ND	5.0	1		1,1-Dichloropropene	ND	5.0	1	
Bromochloromethane	ND	5.0	1		c-1,3-Dichloropropene	ND	5.0	1	
Bromodichloromethane	ND	5.0	1		t-1,3-Dichloropropene	ND	5.0	1	
Bromoform	ND	5.0	1		Ethylbenzene	ND	5.0	1	
Bromomethane	ND	25	1		2-Hexanone	ND	50	1	
2-Butanone	ND	50	1		Isopropylbenzene	ND	5.0	1	
n-Butylbenzene	ND	5.0	1		p-Isopropyltoluene	ND	5.0	1	
sec-Butylbenzene	ND	5.0	1		Methylene Chloride	73	50	1	
tert-Butylbenzene	ND	5.0	1		4-Methyl-2-Pentanone	ND	50	1	
Carbon Disulfide	ND	50	1		Naphthalene	ND	50	1	
Carbon Tetrachloride	ND	5.0	1		n-Propylbenzene	ND	5.0	1	
Chlorobenzene	ND	5.0	1		Styrene	ND	5.0	1	
Chloroethane	ND	5.0	1		1,1,1,2-Tetrachloroethane	ND	5.0	1	
Chloroform	ND	5.0	1		1,1,2,2-Tetrachloroethane	ND	5.0	1	
Chloromethane	ND	25	1		Tetrachloroethene	ND	5.0	1	
2-Chlorotoluene	ND	5.0	1		Toluene	ND	5.0	1	
4-Chlorotoluene	ND	5.0	1		1,2,3-Trichlorobenzene	ND	10	1	
Dibromochloromethane	ND	5.0	1		1,2,4-Trichlorobenzene	ND	5.0	1	
1,2-Dibromo-3-Chloropropane	ND	10	1		1,1,1-Trichloroethane	ND	5.0	1	
1,2-Dibromoethane	ND	5.0	1		1,1,2-Trichloroethane	ND	5.0	1	
Dibromomethane	ND	5.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1	
1,2-Dichlorobenzene	ND	5.0	1		Trichloroethene	ND	5.0	1	
1,3-Dichlorobenzene	ND	5.0	1		1,2,3-Trichloropropane	ND	5.0	1	
1,4-Dichlorobenzene	ND	5.0	1		1,2,4-Trimethylbenzene	ND	5.0	1	
Dichlorodifluoromethane	ND	5.0	1		Trichlorofluoromethane	ND	50	1	
1,1-Dichloroethane	ND	5.0	1		1,3,5-Trimethylbenzene	ND	5.0	1	
1,2-Dichloroethane	ND	5.0	1		Vinyl Acetate	ND	50	1	
1,1-Dichloroethene	ND	5.0	1		Vinyl Chloride	ND	5.0	1	
c-1,2-Dichloroethene	ND	5.0	1		p/m-Xylene	ND	5.0	1	
t-1,2-Dichloroethene	ND	5.0	1		o-Xylene	ND	5.0	1	
1,2-Dichloropropane	ND	5.0	1		Methyl-t-Butyl Ether (MTBE)	ND	5.0	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	113	73-139		1,2-Dichloroethane-d4	115	73-145	
Toluene-d8	97	90-108		1,4-Bromofluorobenzene	92	71-113	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/kg
Project: 022111			Page 2 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[022111] Kihei-Composite	**06-09-0026-20**	**08/29/06**	**Solid**	**09/05/06**	**09/05/06**	**060905L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	69	50	1		1,3-Dichloropropane	ND	5.0	1	
Benzene	ND	5.0	1		2,2-Dichloropropane	ND	5.0	1	
Bromobenzene	ND	5.0	1		1,1-Dichloropropene	ND	5.0	1	
Bromochloromethane	ND	5.0	1		c-1,3-Dichloropropene	ND	5.0	1	
Bromodichloromethane	ND	5.0	1		t-1,3-Dichloropropene	ND	5.0	1	
Bromoform	ND	5.0	1		Ethylbenzene	ND	5.0	1	
Bromomethane	ND	25	1		2-Hexanone	ND	50	1	
2-Butanone	ND	50	1		Isopropylbenzene	ND	5.0	1	
n-Butylbenzene	ND	5.0	1		p-Isopropyltoluene	ND	5.0	1	
sec-Butylbenzene	ND	5.0	1		Methylene Chloride	74	50	1	
tert-Butylbenzene	ND	5.0	1		4-Methyl-2-Pentanone	ND	50	1	
Carbon Disulfide	ND	50	1		Naphthalene	ND	50	1	
Carbon Tetrachloride	ND	5.0	1		n-Propylbenzene	ND	5.0	1	
Chlorobenzene	ND	5.0	1		Styrene	ND	5.0	1	
Chloroethane	ND	5.0	1		1,1,1,2-Tetrachloroethane	ND	5.0	1	
Chloroform	ND	5.0	1		1,1,2,2-Tetrachloroethane	ND	5.0	1	
Chloromethane	ND	25	1		Tetrachloroethene	ND	5.0	1	
2-Chlorotoluene	ND	5.0	1		Toluene	ND	5.0	1	
4-Chlorotoluene	ND	5.0	1		1,2,3-Trichlorobenzene	ND	10	1	
Dibromochloromethane	ND	5.0	1		1,2,4-Trichlorobenzene	ND	5.0	1	
1,2-Dibromo-3-Chloropropane	ND	10	1		1,1,1-Trichloroethane	ND	5.0	1	
1,2-Dibromoethane	ND	5.0	1		1,1,2-Trichloroethane	ND	5.0	1	
Dibromomethane	ND	5.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1	
1,2-Dichlorobenzene	ND	5.0	1		Trichloroethene	ND	5.0	1	
1,3-Dichlorobenzene	ND	5.0	1		1,2,3-Trichloropropane	ND	5.0	1	
1,4-Dichlorobenzene	ND	5.0	1		1,2,4-Trimethylbenzene	ND	5.0	1	
Dichlorodifluoromethane	ND	5.0	1		Trichlorofluoromethane	ND	50	1	
1,1-Dichloroethane	ND	5.0	1		1,3,5-Trimethylbenzene	ND	5.0	1	
1,2-Dichloroethane	ND	5.0	1		Vinyl Acetate	ND	50	1	
1,1-Dichloroethene	ND	5.0	1		Vinyl Chloride	ND	5.0	1	
c-1,2-Dichloroethene	ND	5.0	1		p/m-Xylene	ND	5.0	1	
t-1,2-Dichloroethene	ND	5.0	1		o-Xylene	ND	5.0	1	
1,2-Dichloropropane	ND	5.0	1		Methyl-t-Butyl Ether (MTBE)	ND	5.0	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	114	73-139		1,2-Dichloroethane-d4	117	73-145	
Toluene-d8	98	90-108		1,4-Bromofluorobenzene	91	71-113	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/kg
Project: 022111			Page 3 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	**099-10-005-12,691**	**N/A**	**Solid**	**09/05/06**	**09/05/06**	**060905L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	1		1,3-Dichloropropane	ND	5.0	1	
Benzene	ND	5.0	1		2,2-Dichloropropane	ND	5.0	1	
Bromobenzene	ND	5.0	1		1,1-Dichloropropene	ND	5.0	1	
Bromochloromethane	ND	5.0	1		c-1,3-Dichloropropene	ND	5.0	1	
Bromodichloromethane	ND	5.0	1		t-1,3-Dichloropropene	ND	5.0	1	
Bromoform	ND	5.0	1		Ethylbenzene	ND	5.0	1	
Bromomethane	ND	25	1		2-Hexanone	ND	50	1	
2-Butanone	ND	50	1		Isopropylbenzene	ND	5.0	1	
n-Butylbenzene	ND	5.0	1		p-Isopropyltoluene	ND	5.0	1	
sec-Butylbenzene	ND	5.0	1		Methylene Chloride	ND	50	1	
tert-Butylbenzene	ND	5.0	1		4-Methyl-2-Pentanone	ND	50	1	
Carbon Disulfide	ND	50	1		Naphthalene	ND	50	1	
Carbon Tetrachloride	ND	5.0	1		n-Propylbenzene	ND	5.0	1	
Chlorobenzene	ND	5.0	1		Styrene	ND	5.0	1	
Chloroethane	ND	5.0	1		1,1,1,2-Tetrachloroethane	ND	5.0	1	
Chloroform	ND	5.0	1		1,1,2,2-Tetrachloroethane	ND	5.0	1	
Chloromethane	ND	25	1		Tetrachloroethene	ND	5.0	1	
2-Chlorotoluene	ND	5.0	1		Toluene	ND	5.0	1	
4-Chlorotoluene	ND	5.0	1		1,2,3-Trichlorobenzene	ND	10	1	
Dibromochloromethane	ND	5.0	1		1,2,4-Trichlorobenzene	ND	5.0	1	
1,2-Dibromo-3-Chloropropane	ND	10	1		1,1,1-Trichloroethane	ND	5.0	1	
1,2-Dibromoethane	ND	5.0	1		1,1,2-Trichloroethane	ND	5.0	1	
Dibromomethane	ND	5.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1	
1,2-Dichlorobenzene	ND	5.0	1		Trichloroethene	ND	5.0	1	
1,3-Dichlorobenzene	ND	5.0	1		1,2,3-Trichloropropane	ND	5.0	1	
1,4-Dichlorobenzene	ND	5.0	1		1,2,4-Trimethylbenzene	ND	5.0	1	
Dichlorodifluoromethane	ND	5.0	1		Trichlorofluoromethane	ND	50	1	
1,1-Dichloroethane	ND	5.0	1		1,3,5-Trimethylbenzene	ND	5.0	1	
1,2-Dichloroethane	ND	5.0	1		Vinyl Acetate	ND	50	1	
1,1-Dichloroethene	ND	5.0	1		Vinyl Chloride	ND	5.0	1	
c-1,2-Dichloroethene	ND	5.0	1		p/m-Xylene	ND	5.0	1	
t-1,2-Dichloroethene	ND	5.0	1		o-Xylene	ND	5.0	1	
1,2-Dichloropropane	ND	5.0	1		Methyl-t-Butyl Ether (MTBE)	ND	5.0	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	108	73-139		1,2-Dichloroethane-d4	107	73-145	
Toluene-d8	97	90-108		1,4-Bromofluorobenzene	92	71-113	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received:	09/01/06
Work Order No:	06-09-0026
Preparation:	EPA 3050B
Method:	EPA 6010B

Project 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
06-09-0056-5	**Solid**	**ICP 3300**	**09/05/06**	**09/06/06**	**060905S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	33	33	50-115	0	0-20	3
Arsenic	103	103	75-125	1	0-20	
Beryllium	99	101	75-125	2	0-20	
Cadmium	106	107	75-125	1	0-20	
Chromium	102	102	75-125	0	0-20	
Copper	104	106	75-125	1	0-20	
Lead	103	105	75-125	1	0-20	
Nickel	106	108	75-125	1	0-20	
Selenium	98	99	75-125	2	0-20	
Silver	110	110	75-125	1	0-20	
Thallium	95	98	75-125	3	0-20	
Zinc	108	105	75-125	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
[022111] Mala-Composite	**Solid**	**GC 3**	**09/05/06**	**09/06/06**	**060905S05**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Motor Oil	76	86	64-130	13	0-15	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
06-09-0067-1	**Solid**	**GC 3**	**09/05/06**	**09/05/06**	**060905S04**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	129	179	64-130	25	0-15	4,3

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 7471A Total
		Method:	EPA 7471A

Project 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
06-09-0056-5	**Solid**	**Mercury**	**09/05/06**	**09/05/06**	**060905S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	116	104	76-136	10	0-16	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8081A

Project 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
06-08-1869-2	**Solid**	**GC 16**	**09/05/06**	**09/05/06**	**060905S03**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gamma-BHC	71	64	50-135	10	0-25	
Heptachlor	57	53	50-135	6	0-25	
Endosulfan I	63	57	50-135	9	0-25	
Dieldrin	60	55	50-135	9	0-25	
Endrin	70	65	50-135	8	0-25	
4,4'-DDT	65	65	50-135	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 8151A
		Method:	EPA 8151A

Project 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
[022111] Kihei-3-B	**Solid**	**GC 0**	**09/05/06**	**09/06/06**	**060905S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
2,4-D	63	65	30-130	4	0-30	
2,4,5-T	84	86	30-130	3	0-30	
2,4-DB	84	84	30-130	0	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8270C

Project 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
[022111] Kihei-Composite	**Solid**	**GC/MS J**	**09/05/06**	**09/08/06**	**060905S10**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Phenol	99	97	57-123	3	0-16	
2-Chlorophenol	103	101	57-111	2	0-17	
1,4-Dichlorobenzene	92	91	49-127	1	0-20	
N-Nitroso-di-n-propylamine	98	94	54-144	4	0-17	
1,2,4-Trichlorobenzene	100	97	42-132	3	0-20	
4-Chloro-3-Methylphenol	112	109	50-128	3	0-17	
Acenaphthene	99	98	49-133	1	0-18	
4-Nitrophenol	94	97	30-144	3	0-21	
2,4-Dinitrotoluene	105	103	50-128	2	0-18	
Pentachlorophenol	85	84	29-113	0	0-22	
Pyrene	69	70	47-149	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

AECOS, Inc.		Date Received:	09/01/06
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8310

Project 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
06-09-0095-1	**Solid**	**HPLC 5**	**09/05/06**	**09/05/06**	**060905S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzo (b) Fluoranthene	75	76	40-160	2	0-20	
Benzo (k) Fluoranthene	75	77	40-160	2	0-20	
Benzo (a) Pyrene	76	78	40-160	2	0-20	
Dibenz (a,h) Anthracene	80	81	40-160	1	0-20	
Benzo (g,h,i) Perylene	74	75	40-160	1	0-20	
Indeno (1,2,3-c,d) Pyrene	71	72	40-160	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received:	09/01/06
Work Order No:	06-09-0026
Preparation:	EPA 5030B
Method:	EPA 8260B

Project 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
06-09-0113-1	**Solid**	**GC/MS Z**	**09/05/06**	**09/05/06**	**060905S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	95	94	79-115	1	0-13	
Carbon Tetrachloride	97	98	55-139	1	0-15	
Chlorobenzene	96	94	79-115	1	0-17	
1,2-Dichlorobenzene	93	90	63-123	3	0-23	
1,1-Dichloroethene	92	90	69-123	2	0-16	
Toluene	97	96	79-115	1	0-15	
Trichloroethene	97	96	66-144	2	0-14	
Vinyl Chloride	82	86	60-126	5	0-14	
Methyl-t-Butyl Ether (MTBE)	91	91	68-128	1	0-14	
Tert-Butyl Alcohol (TBA)	89	88	44-134	1	0-37	
Diisopropyl Ether (DIPE)	92	92	75-123	1	0-12	
Ethyl-t-Butyl Ether (ETBE)	93	94	75-117	1	0-12	
Tert-Amyl-Methyl Ether (TAME)	97	98	79-115	1	0-12	
Ethanol	84	89	42-138	5	0-28	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3050B
		Method:	EPA 6010B

Project: 022111

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
097-01-002-8,128	**Solid**	**ICP 3300**	**09/05/06**	**060905-I-01**	**060905L01**

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Antimony	25.0	23.8	95	80-120	
Arsenic	25.0	24.4	98	80-120	
Beryllium	25.0	26.0	104	80-120	
Cadmium	25.0	25.6	102	80-120	
Chromium	25.0	25.1	100	80-120	
Copper	25.0	24.4	98	80-120	
Lead	25.0	25.8	103	80-120	
Nickel	25.0	26.5	106	80-120	
Selenium	25.0	23.2	93	80-120	
Silver	12.5	12.6	101	80-120	
Thallium	25.0	24.3	97	80-120	
Zinc	25.0	25.4	102	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	N/A
		Method:	EPA 9010B/9014

Project: 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-029-1,646	**Solid**	**UV 2**	**09/09/06**	**09/09/06**	**60909CNL1**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Cyanide, Total	86	86	80-120	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project: 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-254-6	**Solid**	**GC 3**	**09/05/06**	**09/06/06**	**060905B05**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Motor Oil	76	77	75-123	1	0-12	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project: 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-275-2	**Solid**	**GC 3**	**09/05/06**	**09/05/06**	**060905B04**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	88	92	75-123	4	0-12	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 7471A Total
		Method:	EPA 7471A

Project: 022111

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-04-007-4,124	**Solid**	**Mercury**	**09/05/06**	**060905-I-02_1.icp**	**060905L02**

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Mercury	0.835	0.823	99	82-124	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received:	N/A
Work Order No:	06-09-0026
Preparation:	EPA 3545
Method:	EPA 8081A/8082

Project: 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-014-2,876	**Solid**	**GC 16**	**09/05/06**	**09/05/06**	**060905L03**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gamma-BHC	73	65	50-135	11	0-25	
Heptachlor	66	60	50-135	11	0-25	
Endosulfan I	68	62	50-135	9	0-25	
Dieldrin	68	61	50-135	12	0-25	
Endrin	71	60	50-135	16	0-25	
4,4'-DDT	68	60	50-135	12	0-25	
Aroclor-1260	126	130	50-135	3	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 8151A
		Method:	EPA 8151A

Project: 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-033-559	**Solid**	**GC 0**	**09/05/06**	**09/06/06**	**060905L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
2,4-D	85	88	30-130	4	0-30	
2,4,5-T	116	122	30-130	5	0-30	
2,4-DB	118	123	30-130	4	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8270C

Project: 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-002-1,678	**Solid**	**GC/MS J**	**09/05/06**	**09/08/06**	**060905L10**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Phenol	92	54	59-125	51	0-15	X
2-Chlorophenol	95	57	60-114	49	0-15	X
1,4-Dichlorobenzene	90	55	61-121	48	0-21	X
N-Nitroso-di-n-propylamine	90	54	64-136	50	0-15	X
1,2,4-Trichlorobenzene	94	56	58-118	51	0-18	X
4-Chloro-3-Methylphenol	104	62	61-121	51	0-14	X
Acenaphthene	95	56	59-125	51	0-15	X
4-Nitrophenol	95	56	38-152	52	0-31	X
2,4-Dinitrotoluene	97	58	51-141	51	0-16	X
Pentachlorophenol	81	49	38-116	49	0-20	X
Pyrene	66	35	51-141	61	0-14	X

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 3545
		Method:	EPA 8310

Project: 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-07-002-735	**Solid**	**HPLC 5**	**09/05/06**	**09/05/06**	**060905L02**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzo (b) Fluoranthene	99	104	40-160	5	0-20	
Benzo (k) Fluoranthene	99	104	40-160	5	0-20	
Benzo (a) Pyrene	100	106	40-160	6	0-20	
Dibenz (a,h) Anthracene	101	107	40-160	5	0-20	
Benzo (g,h,i) Perylene	97	103	40-160	7	0-20	
Indeno (1,2,3-c,d) Pyrene	93	98	40-160	5	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	06-09-0026
Kaneohe, HI 96744-3221		Preparation:	EPA 5030B
		Method:	EPA 8260B

Project: 022111

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-10-005-12,691	**Solid**	**GC/MS Z**	**09/05/06**	**09/05/06**	**060905L02**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	97	97	84-114	0	0-7	
Carbon Tetrachloride	100	100	66-132	0	0-12	
Chlorobenzene	97	98	87-111	1	0-7	
1,2-Dichlorobenzene	98	97	79-115	1	0-8	
1,1-Dichloroethene	92	92	73-121	0	0-12	
Toluene	99	100	78-114	1	0-7	
Trichloroethene	96	101	84-114	5	0-8	
Vinyl Chloride	86	87	63-129	1	0-15	
Methyl-t-Butyl Ether (MTBE)	97	96	77-125	0	0-11	
Tert-Butyl Alcohol (TBA)	93	93	47-137	1	0-27	
Diisopropyl Ether (DIPE)	99	99	76-130	0	0-8	
Ethyl-t-Butyl Ether (ETBE)	104	104	76-124	0	0-12	
Tert-Amyl-Methyl Ether (TAME)	106	107	82-118	1	0-11	
Ethanol	85	85	59-131	0	0-21	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-09-0026

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

1 of 2

SUB---CHAIN OF CUSTODY FORM

0026

AECOS, Inc.
45-939 Kamehameha Highway Suite 104
Kaneohe, Oahu, HI 96744
Tel: (808) 234-7770 Fax: 234-7775

PROJECT FILE No.:

LOG NUMBER: [022111]

CLIENT: AECOS INC.
ADDRESS:

CONTACT: SNOOKIE MELLO
PHONE No.: ☎ (808)234-7770
Purchase Order No.:

☐ RUSH
☐ SEE REVERSE
SPECIAL INSTRUCTIONS

	☑	SAMPLE ID	SAMPLED DATE	TIME	SAMPLE TYPE	CONTAINER(S)		REQUESTED ANALYSES	PRESERVATION
1		022111 Mala-1-A	8/30/06	0700	sediment	1	8oz. jar	VOC	none
2		Mala-2-A		0755					
3		Mala-3-A		0930					
4		Mala-1-B		0700				Priority Metals, PAH, Cyanide,	
5		Mala-2-B		0755				Pesticides, Herbicides, Dioxins, PCBs	
6		Mala-3-B		0930				Phenols, Phthalates	
7		Mala-1-C		0700		1	16oz. jar	TPH (Oil + diesel)	
8		Mala-2-C		0755					
9		Mala-3-C		0930					
10									

CLIENTS PROVIDING SAMPLES TO THE LABORATORY SHOULD COMPLETE AS MUCH OF THE ABOVE FORM AS POSSIBLE. NOTE: NAME AND DATED SIGNATURE OF PERSON COLLECTING THE SAMPLE MUST BE ENTERED BELOW ↓. INFORMATION REQUESTED IN SHADED BOXES ABOVE TO BE FILLED IN BY THE LABORATORY.

SAMPLED BY:	RECEIVED BY:	RECEIVED FOR LABORATORY:
T. Koehler (PRINT NAME)	DATE 20__	DATE 9.1.06 20__
DATE 8/30 20 06	SIGNATURE	SIGNATURE
RELINQUISHED:	TIME	TIME 1030
M. Hasegawa (SIGNATURE)	RELINQUISHED:	RELINQUISHED:
DATE 8/31 20 06	DATE 9.1.06 20__	DATE 20__
TIME noon	SIGNATURE OR INITIALS	SIGNATURE OR INITIALS
	TIME 1030	TIME

COMMENTS:

PRECAUTIONS:

DISPOSAL:

USE (BLACK) INK

Sampling times on chain of custody do not match sampling times on sample bottles.

RETURN SAMPLE TO CLIENT ☐

2 of 2

SUB---CHAIN OF CUSTODY FORM

(3026)

AECOS, Inc.
45-939 Kamehameha Highway Suite 104
Kaneohe, Oahu, HI 96744
Tel: (808) 234-7770 Fax: 234-7775

PROJECT FILE No.:

LOG NUMBER [022111]

CLIENT: AECOS INC.
ADDRESS:

CONTACT: SNOOKIE MELLO
PHONE No.: ☎ (808)234-7770
Purchase Order No.:

☐ RUSH
☐ SEE REVERSE
SPECIAL INSTRUCTIONS

	☑	SAMPLE ID	SAMPLED DATE	TIME	SAMPLE TYPE	CONTAINER(S)		REQUESTED ANALYSES	PRESERVATION
1		022111 Kihei-1-A	8/29/06	1125	sediment	1	8oz jar	VOC	none
2		Kihei-2-A		1307					
3		Kihei-3-A		1515					
4		Kihei-1-B		1125				Priority Metals PAH Cyanide, Pesticides, Herbicides, Dioxins, PCBs, Phenols, Phthalates	
5		Kihei-2-B		1307					
6		Kihei-3-B		1515					
7		Kihei-1-C		1125		1	16oz jar	TPH (Diesels, Oils)	
8		Kihei-2-C		1307					
9		Kihei-3-C		1515					
10									

CLIENTS PROVIDING SAMPLES TO THE LABORATORY SHOULD COMPLETE AS MUCH OF THE ABOVE FORM AS POSSIBLE. NOTE: NAME AND DATED SIGNATURE OF PERSON COLLECTING THE SAMPLE MUST BE ENTERED BELOW ↓. INFORMATION REQUESTED IN SHADED BOXES ABOVE TO BE FILLED IN BY THE LABORATORY.

SAMPLED BY: T. Koehler (PRINT NAME) — DATE 8/29 20 06
RELINQUISHED: M. Hasegawa (SIGNATURE) — DATE 8/31 20 06 — TIME noon

RECEIVED BY: (SIGNATURE) — DATE 20__ — TIME
RELINQUISHED: (SIGNATURE OR INITIALS) — DATE 20__ — TIME

RECEIVED FOR LABORATORY: (SIGNATURE) — DATE 9-1-06 20__ — TIME 1030
RELINQUISHED: (SIGNATURE OR INITIALS) — DATE 20__ — TIME

COMMENTS:
PRECAUTIONS:
DISPOSAL:

USE (BLACK) INK

Sampling times on chain of custody do not match sampling times on sample bottles

RETURN SAMPLE TO CLIENT ☐

0026

AECOS, Inc.
(808) 234-7770
45-939 Kamehameha Hwy, #104
Kaneohe HI 96744

Subcontractor: Calscience Environmental

Requested By: SNOOKIE MELLO
Date: 8/31/06

Results Requested By: normal TAT

Log No.	Qty	Sample Type	Analysis Requested	Collection Information	Sample Preparation
022111	6	sediment	VOC	8/29/06 8/30/06	none
↓	6	↓	TPH (Diesel, Oil)	↓	↓
↓	6	↓	Priority Metals PAH	↓	↓
			Cyanide, Pesticides, Herbicides, Dioxins, PCB, Phenols,		
			Phthalates		

Notes/Special Instructions:

0036

Soil Permit

Permit Number: S-35286 Revised

UNITED STATES DEPARTMENT OF AGRICULTURE

Animal and Plant Health Inspection Service

Plant Protection and Quarantine

Issued To: Calscience Environmental Laboratories, Inc.
(Steven L. Lane)
7440 Lincoln Way
Garden Grove, California 92641-1432

TELEPHONE: (714) 895-5494

Under the authority of the Federal Plant Pest Act of May 23, 1957, permission is hereby granted to the facility/individual named above subject to the following conditions:

1. Valid for shipments of soil not heat treated at the port of entry, only if a compliance agreement (PPQ Form 519) has been completed and signed. Compliance Agreements and Soil permits are non-transferable. If you hold a Soil Permit and you leave your present employer or company, you must notify your local USDA office promptly. A copy of this permit must accompany each shipment.
2. To be shipped in sturdy-leakproof, containers, released without treatment at the port of entry.
3. To be used only for analysis, and only in the facility of the permittee at Calscience Environmental Laboratories, Inc., located in Garden Grove, California.
4. No use of soil for growing purposes is authorized, including the isolation or culture of organisms imported in soil.
5. All unconsumed soil, containers, and effluent is to be autoclaved, incinerated, or heat treated by the permittee at the conclusion of the project as approved and prescribed by Plant Protection and Quarantine.
6. This permit authorizes shipments from all foreign sources, including Guam, Hawaii, Puerto Rico, and the U.S. Virgin Islands through any U.S. port of entry staffed by PPQ.
7. The permittee must notify the office of the Orange County Agricultural Commissioner upon arrival of shipment(s) at Area Code (714) 447-7100.

SEPTEMBER 30, 2007
Expiration Date

Lia Stewart
Approving Official LIA STEWART

PPQ FORM 525B (8/94)

PART 1 - PERMITTEE

0026

USDA

United States Department of Agriculture

Animal and Plant Health Inspection Service

Plant Protection and Quarantine

Soil Permit

Permit Number: HON-S-213

Issued To: AECOS, Inc.
45-939 Kam Hwy, Rm 104
Kaneohe, HI 96744
Telephone: (808)234-7770

(808)234-7770

Under the authority of the Federal Plant Protection Act of 2000, permission is hereby granted to the facility/individual named above subject to the following conditions:

1. Valid for shipments of soil not heat treated at the port of entry, only if a compliance agreement (PPQ Form 519) has been completed and signed.
2. To be shipped in sturdy, leakproof containers.
3. To be released without treatment at the port of entry.
4. To be used only for analysis and only in the facility of the permittee, AECOS, Inc. located in, Honolulu, Hawaii.
5. No use of soil for growing purposes is authorized, including the isolation or culture of organisms imported in soil.
6. All unconsumed soil, containers and effluent is to be autoclaved, incinerated or heat treated by the permittee at the conclusion of the project as approved and prescribed by Plant Protection and Quarantine.
7. This permit authorizes shipments from all foreign sources, including Guam, Hawaii, Puerto Rico and the U.S. Virgin Islands through any U.S. port of entry staffed by Plant Protection and Quarantine.
8. Permittee shall notify the office of DHS, CBP, AQI at (808) 861-8497 or Fax (808) 861-8489 of all shipments arriving at or through any military facility (Hickam AFB, Barbers Point NAS, Kaneohe MCBH) at least 24 hrs. prior to arrival.

NOVEMBER 30, 2008
Expiration Date

Thomas A. Miura
Approving Official – Thomas A. Miura

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS

COMPLIANCE AGREEMENT

1. NAME AND MAILING ADDRESS OF PERSON OR FIRM	2. LOCATION
AECOS, Inc. 45-939 Kam Hwy, Rm 104 Kaneohe, HI 96744	45-939 Kam Hwy, Rm 104 Kaneohe, HI 96744 Telephone: (808)234-7770 Fax: (808)234-7775

3. REGULATED ARTICLE(S)

Soil Samples from Foreign Sources

4. APPLICABLE FEDERAL QUARANTINE(S) OR REGULATIONS

7 CFR 330.300

6. *I/We agree to the following:* that in authorizing and participating in this agreement as a basis for the certification of regulated articles, no liability shall be attached either to the U.S. Department of Agriculture, to cooperating agencies, or to any of their employees in the event of injury to the property or the regulated articles: to handle, process, and move regulated articles in accordance with the provisions of applicable plant quarantines: to use all permits and certificates in accordance with instructions; to maintain and offer for inspection such records as may be required; to carry out all additional conditions, treatments, precautions, and sanitary measures which may be required by the inspector in the following stipulations:

See The Attached Addendum, Permit To Receive Foreign Soil.

THIS COMPLIANCE AGREEMENT EXPIRES CONCURRENTLY WITH YOUR PERMIT, it is your responsibility to renew before expiration.

Expiration Date: **November 30, 2008**

7. SIGNATURE	PRINT NAME	8. TITLE	9. DATE SIGNED
Jacqueline F Mello	Jacqueline F. Mello	Vice President	12/6/04

The affixing of the signatures below will validate this agreement which shall remain in effect until canceled, but may be revised as necessary or revoked for noncompliance.

10. AGREEMENT NO.
HON-S-213

11. DATE OF AGREEMENT
12/06/04

12. PPQ OFFICIAL *(Name and Title)*	13. ADDRESS
Thomas A. Miura, Supervisor, Satellite Operations	USDA, APHIS, PPQ 3375 Koapaka Street, Suite G-330 HONOLULU, HI 96819-1868
14. SIGNATURE Thomas Miura	
15. STATE AGENCY OFFICIAL *(Name and Title)* N/A	16. ADDRESS N/A
17. SIGNATURE N/A	

PPQ FORM 519
AUG.1977

REPLACES PPQ 274, 519, 560, AND AQI 83, WHICH ARE OBSOLETE

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 09 - 0026

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: ACOS **DATE:** 9.1.06

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.

_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
3.9 °C IR thermometer.
_____ Ambient temperature.

Initial: [illegible]

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Applicable (N/A): ✓

Initial: [illegible]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: [illegible]

COMMENTS:

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 • FAX: (714) 894-7501

To: Columbia Analytical
Houston, TX

CHAIN OF CUSTODY RECORD

Date 09/07/06

Page 1 of 1

LABORATORY CLIENT:

ADDRESS:

CITY STATE ZIP

TEL: E-MAIL:

CLIENT PROJECT NAME / NUMBER: 06-09-0026

PROJECT CONTACT: Ranjit Clarke

SAMPLER(S): (PRINT)

COELT LOG CODE

P.O. NO.:

LAB USE ONLY

COOLER RECEIPT TEMP = °C

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☐

SPECIAL INSTRUCTIONS:
Standard TAT

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (G)	TPH (D) or	BTEX / MTBE (8260B) or	OXYGENATES (8260B)	VOCs (8260B)	5035 ENCORE PREP	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	CAC, T22 METALS (6010B) / 747	PNAs (8310) or (8270C)	VOCs (TO-14A) or (TO-15)	TPH(G) (TO-3M)	EPA 8280 (Full List)			
	[022111] Malu-Composite		8/30/06	–	S	1														X			
	[022111] Kihei-Composite		8/29/06	–	S	1														X			

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
CCL	FedEx AB # 6735-6242-3922	9/7/06	1700
Relinquished by: (Signature)	Received by: (Signature/Affiliation) 1°C	Date: 9/8/06	Time: 10:30
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/10/06 Revision

Q&Q Graphic 714-898-9702

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
[022111]-KIHEI-COMPOS

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8280 Lab Sample ID: E0600664-002

Client Name: CALSCIENCE Sample Wt/Vol: 15.572 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 10/17/02

Sample Receipt Date: 09/08/06 Instrument ID: VG70S

Ext. Date: 09/18/06 GC Column:db5

Ext. Vol(ul): 100.0 Inj. Vol(ul): 1.0 Sample Data Filename: C14760#3

Analysis Date: 20-SEP-06 Time: 13:34:33 Blank Data Filename: C14760#1

Dilution Factor: 1 Cal. Ver. Data Filename: C14758#1

Concentration Units (ng/L or ug/Kg dry weight): ug/Kg % Moisture: 21.28

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.0007	U	*	*	0.90
1,2,3,7,8-PeCDD	*	0.0007	U	*	*	0.99
1,2,3,4,7,8-HxCDD	*	0.0013	U	*	*	0.71
1,2,3,6,7,8-HxCDD	*	0.0008	U	*	*	1.14
1,2,3,7,8,9-HxCDD	*	0.0010	U	*	*	0.87
1,2,3,4,6,7,8-HpCDD	*	0.0006	U	*	*	1.22
OCDD	0.015	0.0015	J	0.83	1.170	1.18
2,3,7,8-TCDF	*	0.0007	U	*	*	1.14
1,2,3,7,8-PeCDF	*	0.0006	U	*	*	0.98
2,3,4,7,8-PeCDF	*	0.0006	U	*	*	1.02
1,2,3,4,7,8-HxCDF	*	0.0013	U	*	*	0.70
1,2,3,6,7,8-HxCDF	*	0.0010	U	*	*	0.96
1,2,3,7,8,9-HxCDF	*	0.0016	U	*	*	0.59
2,3,4,6,7,8-HxCDF	*	0.0011	U	*	*	0.83
1,2,3,4,6,7,8-HpCDF	*	0.0008	U	*	*	1.04
1,2,3,4,7,8,9-HpCDF	*	0.0011	U	*	*	0.75
OCDF	*	0.0022	U	*	*	1.42
Total Tetra-Dioxins	*	0.0007	U			
Total Penta-Dioxins	*	0.0007	U			
Total Hexa-Dioxins	*	0.0013	U			
Total Hepta-Dioxins	0.002	0.0006				
Total Tetra-Furans	*	0.0007	U			
Total Penta-Furans	*	0.0006	U			
Total Hexa-Furans	*	0.0013	U			
Total Hepta-Furans	*	0.0008	U			

(1) Qualifiers: See flag definitions.
(2) Ion ratios and RRTS are specified in Tables 9 and 10, Method 8280A.

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
[022111]-KIHEI-C

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8280 Lab Sample ID: E0600664-002

Client Name: CALSCIENCE Sample Wt/Vol: 15.572 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): solid Initial Calibration Date: 10/17/02

Sample Receipt Date: 09/08/06 Instrument ID: 70S

Ext. Date: 09/18/06 GC Column ID: db5

Ext. Vol(ul): Inj. Vol(ul): Sample Data Filename: C14760#3

Analysis Date: 20-SEP-06 Time: 13:34:33 Blank Data Filename: C14760#1

Dilution Factor: 1 Cal. Ver. Data Filename: C14758#1

Concentration Units (pg/L or ng/Kg dry weight): ug/Kg % Solids/Lipids: 21.28

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	*	X 0.01	*
OCDD	0.015	X 0.0001	2.00e-06
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	2.00e-06

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Hummans and Wildlife(Environ Health perspect 106:775-792 (1998).

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
[022111]-MALA-COMPOSI

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8280 Lab Sample ID: E0600664-001

Client Name: CALSCIENCE Sample Wt/Vol: 16.478 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 10/17/02

Sample Receipt Date: 09/08/06 Instrument ID: VG70S

Ext. Date: 09/18/06 GC Column:db5

Ext. Vol(ul): 100.0 Inj. Vol(ul): 1.0 Sample Data Filename: C14760#2

Analysis Date: 20-SEP-06 Time: 12:45:11 Blank Data Filename: C14760#1

Dilution Factor: 1 Cal. Ver. Data Filename: C14758#1

Concentration Units (ng/L or ug/Kg dry weight): ug/Kg % Moisture: 26.71

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.0009	U	*	*	0.90
1,2,3,7,8-PeCDD	*	0.0006	U	*	*	0.99
1,2,3,4,7,8-HxCDD	*	0.0013	U	*	*	0.71
1,2,3,6,7,8-HxCDD	*	0.0008	U	*	*	1.14
1,2,3,7,8,9-HxCDD	*	0.0011	U	*	*	0.87
1,2,3,4,6,7,8-HpCDD	0.004	0.0007	JK	1.33	1.078	1.22
OCDD	0.060	0.0020	J	0.86	1.171	1.18
2,3,7,8-TCDF	*	0.0006	U	*	*	1.14
1,2,3,7,8-PeCDF	*	0.0007	U	*	*	0.98
2,3,4,7,8-PeCDF	*	0.0007	U	*	*	1.02
1,2,3,4,7,8-HxCDF	*	0.0014	U	*	*	0.70
1,2,3,6,7,8-HxCDF	*	0.0010	U	*	*	0.96
1,2,3,7,8,9-HxCDF	*	0.0016	U	*	*	0.59
2,3,4,6,7,8-HxCDF	*	0.0011	U	*	*	0.83
1,2,3,4,6,7,8-HpCDF	0.002	0.0011	JK	0.76	1.051	1.04
1,2,3,4,7,8,9-HpCDF	*	0.0016	U	*	*	0.75
OCDF	*	0.0023	U	*	*	1.42
Total Tetra-Dioxins	*	0.0009	U			
Total Penta-Dioxins	*	0.0006	U			
Total Hexa-Dioxins	*	0.0013	U			
Total Hepta-Dioxins	0.005	0.0007				
Total Tetra-Furans	*	0.0006	U			
Total Penta-Furans	*	0.0007	U			
Total Hexa-Furans	*	0.0014	U			
Total Hepta-Furans	0.004	0.0011				

(1) Qualifiers: See flag definitions.
(2) Ion ratios and RRTS are specified in Tables 9 and 10, Method 8280A.

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
[022111]-MALA-CO

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8280 Lab Sample ID: E0600664-001

Client Name: CALSCIENCE Sample Wt/Vol: 16.478 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): solid Initial Calibration Date: 10/17/02

Sample Receipt Date: 09/08/06 Instrument ID: 70S

Ext. Date: 09/18/06 GC Column ID: db5

Ext. Vol(ul): Inj. Vol(ul): Sample Data Filename: C14760#2

Analysis Date: 20-SEP-06 Time: 12:45:11 Blank Data Filename: C14760#1

Dilution Factor: 1 Cal. Ver. Data Filename: C14758#1

Concentration Units (pg/L or ng/Kg dry weight): ug/Kg % Solids/Lipids: 26.71

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.004	X 0.01	3.90e-05
OCDD	0.060	X 0.0001	6.00e-06
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.002	X 0.01	1.90e-05
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	6.40e-05

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Hummans and Wildlife(Environ Health perspect 106:775-792 (1998).